ABSTRACT OF THE DISCLOSURE

A switched router for transmitting packetized data concurrently between a plurality of devices coupled to the switched router. The devices are coupled to the I/O ports of the switched router. The switched router is then programmed to route packets of data from various source ports to several destination ports. Different packets may be transmitted concurrently through the switched router. The packets are comprised of a command word containing information corresponding to packet routing, data format, size, and transaction identification. Furthermore, the command word may include a destination identification number for routing the packet to a destination device, a source identification number used by a destination device to send back responses, a transaction number to tag requests that require a response, and a packet type value indicating a particular type of packet. In addition, there may be bits within a packet used to indicate a coherent transaction, guarantee bandwidth, an error during transmission, or a sync barrier for write ordering. Other types of packets may include a fetch and operation packet with increment by one, a fetch and operation packet with decrement by one, a fetch and operation packet with clear, a store and operation packet with increment by one, a store and operation packet with decrement by one, a store and operation packet with a logical OR, and a store and operation packet with a logical AND.